REMARKS

Applicant respectfully requests reconsideration of the present application in view of the foregoing amendments and in view of the reasons which follow. Entry of the foregoing amendment is respectfully requested, because the amendment does not raise new issues that would require further consideration. In addition, the amendment to the specification is being made in response to the objection set forth in the outstanding Office Action, which objection was raised for the first time.

Claims 1-6 and 9-20 are pending in this application.

In paragraph 1, of the Office Action, the Examiner objects to the specification for referring to the claims in the specification as set forth at page 8, lines 9, 19 and 23; page 9, lines 7 and 18; page 10, lines 1, 8 and 12; and page 14, line 4. Applicants submit that this rejection has been obviated by incorporating the subject matter of the original claims into the specification at the appropriate location. Accordingly, reconsideration and withdrawal of the objection are respectfully requested.

Claims 1-6, 9-10 and 13-20 stand rejected under 35 U.S.C. § 102(b) as being anticipated by or, in the alternative, under 35 U.S.C. § 103(a) as being obvious over USP 5458703 to Nakai. Claims 1-6, 9-10 and 13-16, 19 and 20 stand rejected under 35 U.S.C. § 102(b) as being anticipated by or, in the alternative, under 35 U.S.C. § 103(a) as being obvious over JP 11179407, USP 5746843 to Miyata et al., JP 09003590, JP 08193240, USP 5972129 to Beguinot et al., or JP 01319629. Reconsideration and withdrawal of the rejection are respectfully requested.

The Office Action rejects the claims over the same prior art as in the previous Office Action. In addressing applicants' arguments at paragraphs 11 and 12 of the Office Action regarding the claim transition phrase "consisting essentially of" and its exclusion of aluminum from the claimed alloy, the Examiner takes the position that because the present invention requires deoxidation agents such as silicon and titanium and nitride forming agents, and since aluminum is a well known oxidation agent and nitride former, that aluminum could also be included as well. The Examiner also notes that the application did not exclude aluminum in the specification or claims, as originally filed. The Examiner then specifically requires factual evidence regarding the exclusion of aluminum from the claims.

Applicants do not agree with the Examiner's reasoning regarding the presence of silicon or titanium as deoxidation agents in the present invention vis-a-vis the exclusion of aluminum. However, as requested by the Examiner, applicants are providing factual evidence, in the form of a declaration executed by one skilled in the art under 37 C.F.R. 1.132, supporting applicants' arguments at page 4 of the previous reply regarding the effect aluminum will have on the basic and novel characteristics of the claimed composition of high heat resistance and good mechanical strength and why the claim transitional phrase excludes aluminum.

The enclosed Rule 132 Declaration is executed by Mr. Ryuichi Ishii, an inventor of the present application. The data in the declaration shows that aluminum, in a coagulating process, can bond to oxygen or nitrogen to form an oxide or nitride, which is an undesirable coarse residue in the steel. Specifically, as shown in Table 2, when the claimed steels additionally contain aluminum, both the creep rupture time at 600°C and the absorbed energy at 20°C are significantly reduced. Furthermore, as shown in the distribution image map attached to the Declaration, both oxygen and aluminum were concentrated or localized in substantially the same areas in the steel P13A2, which means that most of the aluminum in the detected area of steel P13A2 exists in the form of an oxide, i.e., alumina.

The Rule 132 Declaration establishes the adverse effect aluminum has on the basic and novel characteristics of the claimed invention. Thus, the claims' transitional phrase "consisting essentially of" excludes aluminum. In addition, none of the cited art teach or suggest this deterioration caused by the incorporation of aluminum. Thus, the cited art provides no motivation to exclude aluminum. Accordingly, the cited art fails to teach or suggest the claimed composition. As such reconsideration and withdrawal of the rejection are respectfully requested.

Claims 11 and 12 stand rejected under 35 U.S.C. § 103(a) as being obvious over the references applied above, and further in view of JP 09041706 ("JP '706") or JP '706 alone. Reconsideration and withdrawal of the rejection are respectfully requested. The prior art is deficient for the reasons noted above; therefore, substituting the compositions of the references applied above for the composition of JP '706, fails to overcome this deficiency. The Office Action further alleges that the composition of JP '706 would become contaminated with nitrogen based on the allegation that ambient nitrogen would enter the molten steel. The examiner has provided no evidence to show

that nitrogen would enter the steel in the manner asserted in the Office Action, or that even if it did, it would be at the levels recited in the claims. Accordingly, the combination of JP '706 with the other cited art, or JP '706 alone, fails to teach or suggest the claimed invention.

Applicant believes that the present application is now in condition for allowance. Favorable reconsideration of the application as amended is respectfully requested.

The Examiner is invited to contact the undersigned by telephone if it is felt that a telephone interview would advance the prosecution of the present application.

Respectfully submitted,

Date December 7, 2001 By _____

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Should additional fees be necessary in connection with the filing of this paper, or if a petition for extension of time required for timely acceptance of same, the Commissioner is hereby authorized to charge Deposit Account No. 19-0741 for any such fees; and applicant(s) hereby petition for any needed extension of time.

MARKED UP VERSION OF SPECIFICATION CHANGES MADE IN THE AMENDMENT FILED DECEMBER 7, 2001

Page 8, lines 6-10

<Example 1>

This example is to show that the first and second heat-resisting steels having the chemical compositions ~~{as defined in claims 1 and 2}~~ of the present invention that include: 0.15 – 0.30 wt.% C, 0.05– 0.3 wt.% Si, 0.01 – 0.7 wt.% Mn, 1.8 – 2.5 wt.% Cr, 0.15 –0.23 wt.% V, 1.5 – 2.5 wt.% W, 0.01 – 0.02 wt.% Ti, 0.01 – 0.08 wt.% Nb, 0.005 – 0.03 wt.% N, 0.001 – 0.015 wt.% B, and Fe and unavoidable impurities as the remainder; or 0.15 – 0.30 wt.% C, 0.05– 0.3 wt.% Si, 0.01 – 0.7 wt.% Mn, 1.8 – 2.5 wt.% Cr, 0.15 –0.23 wt.% V, 1.5 –2.5 wt.% W, 0.3–0.8 wt.% Mo, 0.01 –0.02 wt.% Ti, 0.01 – 0.08 wt.% Nb, 0.005 – 0.03 wt.% N, 0.001 – 0.015 wt.% B, and Fe and unavoidable impurities as the remainder, respectively, have excellent properties.

Page 8, lines 17-26

Of the heat-resisting steels shown in the table, P1 to P8 are heat-resisting steels whose chemical compositions fall in the ranges ~~{defined in claim}~~ described above under Example 1 ~~{or 2}~~ of the present invention (in this example, referred to as the heat-resisting steels of the present invention), and C1, C2, C4 and C5 are heat-resisting steels whose chemical compositions are not within the ranges defined ~~{in claim}~~ above under Example 1 ~~{or 2}~~ of the present invention (hereinafter referred to as the comparative heat-resisting steels). All of these steels have been controlled to have a tensile strength of approximately 750 MPa.

Page 9, lines 4-8

<Example 2>

This example is to show that the third and fourth heat-resisting steels having the chemical compositions ~~{as defined in claims 3 and 4}~~ of the present invention that include the ranges described above under Example 1, wherein all of Nb and a part of Fe are replaced with V and/or Ti to make the V content 0.23 (exclusive) – 0.35 wt.%, and

the Ti content 0.02 (exclusive) - 0.03 wt.%, the heat-resisting steel thus containing no Nb other than that existing as the impurity; or wherein all of Nb and Ti, and a part of Fe are replaced with V to make the V content 0.23 (exclusive) - 0.35 wt.%, the heat-resisting steel thus containing no Nb and Ti other than those existing as the impurities, respectively, have excellent properties.

Page 9, lines 12-20

Of the heat-resisting steels shown in the table, P9 to P18 are heat-resisting steels whose chemical compositions are in the ranges defined ~~{in claim 3 or 4}~~ under Example 2 the present invention (in this example, referred to as the heat-resisting steels of the present invention); and CI - C3, C6 and C7 are comparative heat-resisting steels whose chemical compositions are not in the ranges ~~{set forth in claim 3 or 4}~~ described above under Example 2 of the present invention. All of these heat-resisting steels have been controlled to have a tensile strength of approximately 750 MPa.

Pages 9, line 35 to page 10, line 2

<Example 3>

This example is to show that the fifth and sixth heat-resisting steels having the chemical compositions ~~{as defined in claims 5 and 6}~~ of the present invention as described above under, Example 2, wherein a part of Fe is replaced with Ni to make the Ni content 0.1 — 3.0 wt.%; or wherein a part of Fe is replaced with Cu to make the Cu content 0.1 — 3.0 wt.%, respectively, have excellent properties.

Page 10, lines 6-15

Of the heat-resisting steels shown in the table, P19 to P24 are heat-resisting steels whose chemical compositions fall in the ranges ~~{defined in claim 5 or 6}~~ described above under Example 3 of the present invention (in this example, referred to as the heat-resisting steels of the present invention); and CI — C9 are heat-resisting steels whose chemical compositions do not fall in the ranges ~~{defined in claim 5 or 6}~~ described above under Example 3 of the present invention (hereinafter referred to as the comparative heat-resisting steels). All of these heat-resisting steels have been controlled to have a tensile strength of approximately 750 MPa.